

455.3 Construction Requirements

455.3.01 Personnel

General Provisions 101 through 150.

455.3.02 Equipment

General Provisions 101 through 150.

455.3.03 Preparation

Prior to placing filter fabric, remove logs, stumps, and any other objects from the ground surface that would tend to puncture the fabric. Leave grasses that have formed root mats in place to provide support for fabric placement.

455.3.04 Fabrication

General Provisions 101 through 150.

455.3.05 Construction

A. Filter Fabric Placement

Place and protect filter fabric as follows:

1. Place filter fabric according to the locations and details shown on the Plans.
2. Ensure the fabric is placed with the warp direction perpendicular to the roadway direction and sewn as shown on the Plans unless otherwise directed.
3. Spread the filter fabric as uniformly as practical over the contour of the ground to avoid looseness.
4. Ensure field sewn seams are made with a lock stitch and comply with the requirements for factory seams as given in the material specifications.
5. Protect the filter fabric from chemicals and prolonged sunlight.
6. Replace any filter fabric damaged by neglect at no additional cost to the Department.

B. Fill Placement Over Fabric

Place fill over the filter fabric according to the Plans and applicable portions of Section 208. Maintain at least 8 in (200 mm) of soil between the fabric and any construction equipment.

455.3.06 Quality Acceptance

General Provisions 101 through 150.

455.3.07 Contractor Warranty and Maintenance

General Provisions 101 through 150.

455.4 Measurement

This work is measured in square yards (meters) of accepted materials in place.

455.4.01 Limits

General Provisions 101 through 150.

455.5 Payment

Filter fabric for embankment stabilization is paid for at the Contract Price per square yard (meter), complete and in place. Payment is full compensation for furnishing materials, placing materials, sewing of fabric as required, and for all labor, equipment, tools and incidentals necessary to perform the work.

Payment will be made under:

Item No. 455	Filter fabric for embankment stabilization	Per square yard (meter)
--------------	--	-------------------------

455.5.01 Adjustments

General Provisions 101 through 150.

Section 456—Indentation Rumble Strips

456.1 General Description

This work includes constructing milled rumble strips on asphaltic concrete shoulders by milling or grinding 1/2 in (13 mm) deep depressions into the finished surface as shown in the Plans.

456.1.01 Definitions

Ground in place skip rumble strips—Rumble strips placed with 28 ft (8.5 m) of strips and 12 ft (3.7 m) of clear space between.

Continuous ground in place rumble strips—Rumble strips placed continuously.

456.1.02 Related References

A. Standard Specifications

General Provisions 101 through 150.

B. Referenced Documents

General Provisions 101 through 150.

456.1.03 Submittals

General Provisions 101 through 150.

456.2 Materials

General Provisions 101 through 150.

456.2.01 Delivery, Storage, and Handling

General Provisions 101 through 150.

456.3 Construction Requirements

456.3.01 Personnel

General Provisions 101 through 150.

456.3.02 Equipment

A. Cutting Tool

Use a cutting tool that meets these requirements:

- Has independent suspension from the power unit to allow the tool to self-align with the slope of the shoulder
- Is equipped with guides to provide consistent alignment of each line of indentations in relation to the roadway
- Houses a single rotary-type milling head in line in the direction of travel
- The milling head is not more than 2 ft (600 mm) in diameter (outside diameter) and is at least 16 in (400 mm) long
- The cutting tips on the milling head are arranged to provide a smooth cut with no more than 0.05 in (1 mm) between the peaks and valleys

456.3.03 Preparation

General Provisions 101 through 150.

456.3.04 Fabrication

General Provisions 101 through 150.

456.3.05 Construction

A. Indentations

Form the rumble strip indentations as follows:

1. For traveled ways opened to traffic, install the indentations within ten calendar days.
2. Begin the indentations from 8 in (200 mm) up to 18 in (450 mm) from the edge of the final riding surface based on the typical section of the paved shoulder.
3. Ensure the finished indentations conform to the following:
 - a. Indentations have a concave circular shape and are spaced 12 in (300 mm) center to center.
 - b. Indentation dimensions:
 - 7 in (175 mm) wide with a 5 in (125 mm) gap in the direction of travel

- At least 16 in (400mm) long when measured perpendicular to the direction of travel.
- At least 1/2 in (13 mm) but not more than 5/8 in (16 mm) deep at center.

Excess waste material resulting from the operation may be swept to the grassed shoulder and spread where applicable. If an adjacent grassed shoulder is not available, or if directed by the Engineer, remove and dispose of the waste material in a manner approved by the Engineer.

456.3.06 Quality Acceptance

General Provisions 101 through 150.

456.3.07 Contractor Warranty and Maintenance

General Provisions 101 through 150.

456.4 Measurement

Milled indentation rumble strips are measured by the gross linear mile (kilometer). The Plan quantity is the pay quantity unless the Engineer makes authorized changes. No deductions will be made for intersections, ramps, bridges, or skips.

456.4.01 Limits

General Provisions 101 through 150.

456.5 Payment

Payment will be made at the Contract Unit Price bid per gross linear mile (kilometer). Payment is full compensation for furnishing equipment and labor and for satisfactorily performing the work.

Payment will be made under:

Item No. 456	Indentation rumble strips—ground in place (continuous)	Per gross linear mile (kilometer)
Item No. 456	Indentation rumble strips—ground in place (skip)	Per gross linear mile (kilometer)

456.5.01 Adjustments

General Provisions 101 through 150.

Section 457—Geogrid Reinforcement

457.1 General Description

Specifications for this work will be included elsewhere in the Contract.

Section 461—Sealing Roadway and Bridge Joints and Cracks

461.1 General Description

This work includes removing the existing sealant material (if applicable), cleaning the joint, and installing silicone sealant in the roadway and bridge joints specified on the Plans. The Plans will designate the:

- Type of joint (transverse or longitudinal)
- Location of joint (mainline, shoulder, ramps, acceleration/deceleration lanes)
- Type of joint (roadway, bridge) to be resealed
- Which type silicone to use (Type A, B, C, or D)

The Engineer will determine the roadway and bridge cracks to be resealed. Unless otherwise specified on the Plans, use Type A silicone for roadway joints and use Type D silicone for bridge joints.

461.1.01 Definitions

General Provisions 101 through 150.